

THE DEAF AMERICAN

Speech to Text:

Today and Tomorrow Conference



Congressman Major Owens (D-NY), chairman of the House Subcommittee on Select Education, urged participants at the Speech to Text Conference to join with other disabled Americans in advocating for their rights. The September 27-30, 1988, meeting at Gallaudet University, Washington, D.C., attracted more than 300 registrants from 37 states and five foreign countries.

2713 MAR89 B G SM
M&M GILBERT EASTMAN
1525 CROFTON PKWY
CROFTON MD 21113



Interpreted for the Hearing Impaired

(poster advertisement)

Seats are reserved in front; we sit.
Most times I'm outside. Here, yet aside.
Alone in a crowd of like women:
They chatter. My hands are still.
Who would watch them and know?

Thirty feet away, forward stage right,
She stands. Black shirt, a touch of lipstick.
Not the singer, nor the piano player,
her name was not on the poster.
Who is this woman standing there?

Piano rumbles, singer walks to the mike,
and the woman in the black shirt
raises her hands in communion.
Those hands: summon, implore, inform, empower.
They sing to me, an invocation to my soul.
Weaving complexities of nuance,
they beckon in MY language.

Her hands do not tremble, smoothly
they sing refrain to reflect the other's voice
as it rises to fill the hall,
and her hands rise to fill my soul.
One sings with her voice,
another with her hands,
I hear with my eyes, my heart, my spirit
within. I yearn to rise and sign
a harmony to heart to heart to heart,
melody to harmony to soul.

I have been joined in beauty with "them":
the different, the standard, the hearing . . .
Who is this woman standing there?
A bridge: The reason for my tears.

—M. Liz Halperin
Denver, CO

Deafness and Eye

Deafness and I—
Because one of us can hear—
Stand on opposite ends from each other;
Face-to-face but far, not really near.
Still, we're connected by a line,
Not of blood (like a brother)
But of eye,
By line of sight
And—
Though none of us can hear it—
By spirit.

—Sal Parlato, Jr.
Rochester, NY

Alice Cogswell

Her name I wrote on winter's frost,
There on the windowpane;
And in the thaw her name was lost,
Lost to me again.

When in the spring I penned her name,
Unto the rested earth;
'Twas there the grass did choose to make,
Its wondrous rebirth.

Then, etched her name unto my heart,
And found through the spanning of years;
Not one letter lost to the hideous frost,
Polished in the memory of tears.

—Benjamin Franklin Pierce
Concord, NH

The National Association of the Deaf

Dr. Lawrence Newman President
Dr. Byron B. Burnes President Emeritus
Dr. Harvey Corson Vice President
Phillip Bravin Secretary-Treasurer
Gary W. Olsen Executive Director



The Deaf American Editorial Staff

Jess M. Smith Editor
Gary W. Olsen Executive Director

Pub. No. ISSN 0011-720X-USPS 150 460

Editorial Office: NAD Branch Office,
445 N. Pennsylvania St., Suite 804
Indianapolis, IN 46204.

Advertising: 445 N. Pennsylvania,
Suite 804, Indianapolis, IN 46204
(317) 638-1715 TDD/V

The Deaf American is published quarterly for \$20 per year by the NAD Branch Office, 445 N. Pennsylvania, Suite 804, Indianapolis, IN 46204. Second-class postage paid at Indianapolis, IN. POSTMASTER: Send address changes to *The Deaf American*, NAD Branch Office, 445 N. Pennsylvania, Suite 804, Indianapolis, IN 46204.

Subscription rates: United States and possessions, the Philippine Islands, Canada, Spain, Mexico, Central and South American countries except the Guineas, 1 year, \$20.00; 2 years, \$40.00. Other countries, 1 year \$30.00. Correspondence relating to editorial matters, articles should be sent to the NAD Branch Office, 445 N. Pennsylvania, Suite 804, Indianapolis, IN 46204. The editorial staff reserves the right as to what will be printed, both narrative matter and advertising. Advertising and subscriptions should be sent to *The Deaf American*, at the address stated above. Advertising does not reflect the editorial policy of the magazine or imply endorsement.

THE DEAF AMERICAN

Vol. 39 No. 1, Winter 1989

- 2 A Note from the Editor
- 3 Speech to Text Conference
- 11 On Being 'Different'
... And Making A Difference
- 12 Mainstreamists in Special Education
A Separate Reality
- 18 RIT/UR Establish International
Hearing and Speech Center
- 19 Telecommunication and the Deaf

THE DEAF AMERICAN

The Deaf American is a quarterly publication aimed at the professional community, as well as at the layman who want indepth stories and articles about topics of interest in the deaf community. Libraries, schools, community centers and other information dissemination sources find *The Deaf American* a convenient source of information for patrons and students.

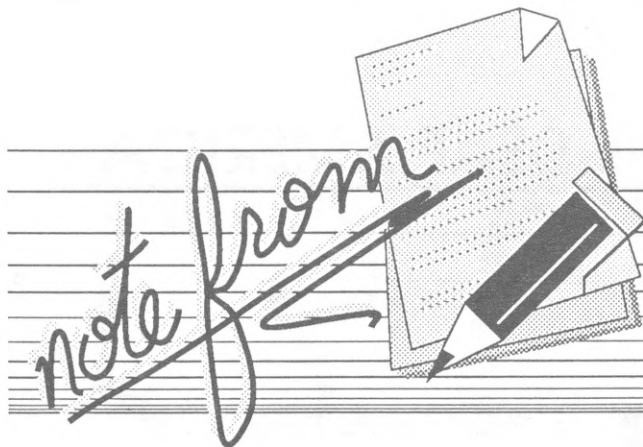
DISPLAY AREAS

Full Page	7 $\frac{1}{8}$ " x 10"
Half Page	3 $\frac{3}{8}$ " x 9 $\frac{1}{2}$ " (vertical) 7 $\frac{3}{8}$ " x 4 $\frac{1}{2}$ " (horizontal)
One-third Page	2 $\frac{1}{4}$ " x 9 $\frac{1}{2}$ " (vertical) 7 $\frac{3}{8}$ " x 3 $\frac{1}{2}$ " (horizontal)
Full Page	Insert front cover
Half Page	Insert front cover
Full Page	Insert back cover
Half Page	Insert back cover
Full Page	Back Cover
Center Spread	2 full pages

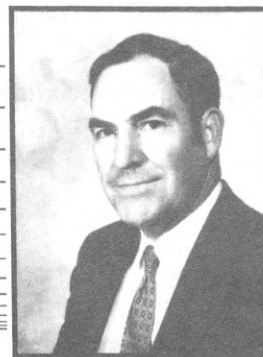
ADVERTISING RATES

	One Insertion	Four Insertions
Full Page	\$ 600.00	\$480.00
Half Page	345.00	276.00
One-third Page	240.00	192.00
Full Page	750.00	
Half Page	425.00	
Full Page	750.00	
Half Page	425.00	
Full Page	950.00	
Center Spread	1,500.00	

Advertisements should be camera ready. Non-camera ready advertisements may be submitted at additional preparation cost (call advertising office for more information). Send insertion orders and advertisements to *The Deaf American*, NAD Branch Office, 445 N. Pennsylvania Avenue, Suite 804, Indianapolis, IN 46204.



Editor Jess Smith



Something like 10 years ago, a new “break-through” for the hearing impaired was heralded far and wide—cochlear implants. After the procedure gained approval, hundreds of candidates for the implants signed up (or were signed up).

Cautions were forthcoming—those with nerve deafness were not to be considered for cochlear implants—success was more likely with those who were postlingually deafened. The surgery was costly although later insurance coverage became applicable—in most cases.

Those who had the implants needed to “learn” or “relearn” how to hear and to distinguish between sounds. For some, success tended to be toward receiving and identifying environmental sounds.

Recently, it has been stated that a “Federal Drug Administration-approved Nucleus 22 Channel Cochlear Implant” will expand the benefits “to include those who lost their hearing early in life, had a hearing loss for a long time and those with nerve deafness.”

We welcome comments from readers who have undergone cochlear implants or know of others who have had the surgery. Also, we will await input regarding the “Nucleus 22 Channel Cochlear Implant.”

Speech to Text—But It’s Still Reading

One of the articles in this issue tells about a “Speech to Text” conference held last September. Technology is making possible a new breakthrough in communication for the deaf—input, that is.

Practicality seems assured, with improvement in capabilities almost certain to come. The cost factor, however, may be a major stumbling block, as it was for the “picturephone” which surfaced something like 25 years ago and was soon shelved.

We are back to the basic problem for education of the deaf—reading. Gains in achievement have been slight despite all the research and innovations in communication technology.

Telecommunication (TTYs and TDDs) have been a boon to the deaf since modest beginnings in the early 1960’s. Sending messages over telephone lines has been further enhanced by computer modems. Facsimile (FAX) equipment makes it possible to send entire pages at a time although the cost is prohibitive for individual use.

Captioned films, both educational and entertainment, have been with us now for something like three decades. Widely heralded in the early stages as a “miracle” towards improving reading, such films have not raised the reading achievement of the deaf to any proven degree.

Captioned television, with both open and closed captioning is both entertaining and informative. For the deaf, closed captioning is akin to the silent movies of bygone years—but more readily available and in broader selectivity. “Live” captioning, with reduced time lag, is another blessing—even allowing for phonetic spelling which can be either amusing or frustrating.

But . . . if one cannot read—or read well—the printed word is still a problem. In all aspects save one, the deaf are at the receiving end of the message. The exception is when the deaf become the senders via TTY’s/TTDs. In other words, reading skills are far more important than writing skills.

A few research projects have dealt with the possibilities of enhancing reading skills via the new modes. Perhaps—and again perhaps—a systematic approach will be developed leading to elevating reading competencies. Let’s continue to hope.

Eugene Waldo Petersen

A tragic head-on collision in Indiana on January 20, 1989, resulted in instant death for Inez Williford Crutchfield Petersen. Her husband, Eugene Waldo Petersen, died of injuries a week later, on January 27, 1989.

Eugene, or Gene as he was better known, was for many years associate editor of *THE DEAF AMERICAN*. He was a master of the “interview” type article. He occupied the Powrie Vaux Doctor Chair at Gallaudet University 1986-1987. He and Inez traveled all over the United States videotaping scores of interviews with a cross section of the deaf. These interviews were to have been compiled in a book on which he was still working at the time of his passing.

Gene had agreed to select some of his interviews for publication in *THE DEAF AMERICAN* prior to completion of his book. The first one appeared in the Fall 1988 issue. The second one was to have run in this issue. We hope to use it in the Spring 1989 issue.

Gene Petersen was a talented writer and an outstanding advocate of the deaf. He will be greatly missed.

'Speech to Text' Conference Attracts 300

By ROBERT C. JOHNSON and DOROTHY L. SMITH

Twenty years from now, it may be possible for computers to convert any and all speech into printed form as it is spoken. Deaf and hard of hearing people alike see this technology, known as automatic speech recognition, as potentially leading to improved face-to-face and telephone communication with hearing people, as well as to the improved captioning of visual media. But while we wait for science and technology to catch up with this dream, there are useful alternatives to automatic speech recognition for generating text from the spoken word—alternatives such as telephone relay services and real-time captioning.

With both near future and distant future in mind, the GRI's (Gallaudet Research Institute's) Technology Assessment Program (TAP) conducted a four-day conference, "Speech to Text: Today and Tomorrow," at Gallaudet September 27-30, 1988. The conference, the first of its kind, attracted a diverse group of more than 300 registrants from 37 states and five foreign countries. The audience included representatives of deaf and hard of hearing consumers, telephone companies, regulatory utility commissions, manufacturers and service-delivery professionals involved in education, rehabilitation and telephone relay.

"Speech to Text" featured 30 speakers and 15 exhibits of the latest technology in telecommunications and captioning for deaf and hard of hearing people. The entire conference was captioned in real time, with additional communication access through interpreters, audio loop amplification and FM ampli-

fication. Funding from the National Institute on Disability and Rehabilitation Research, U.S. Department of Education, made the conference possible, and substantial donations were made by Bell Atlantic and AT&T.

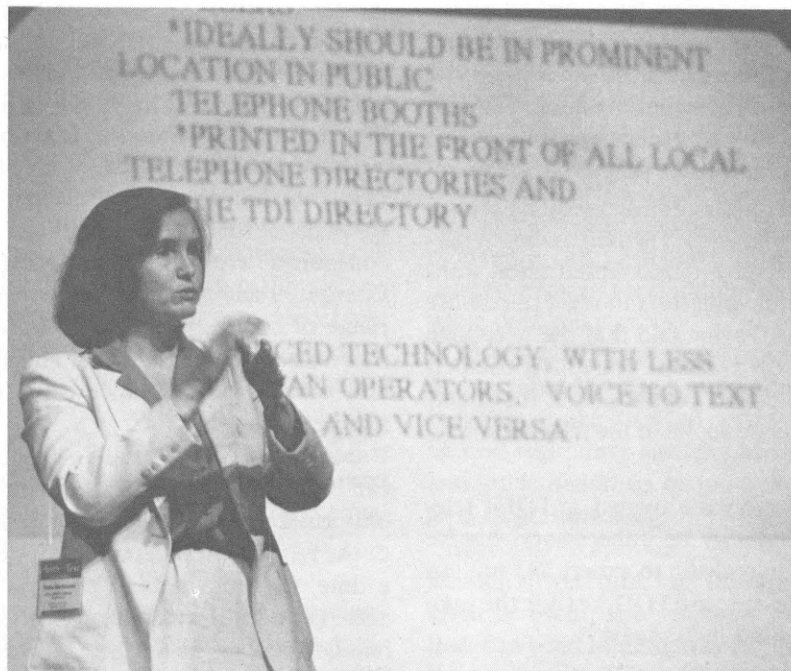
"Relay services, real-time captioning, and speech recognition technology are extremely important topics in the minds of deaf and hard of hearing people," said TAP director and conference chairperson, Dr. Judith Harkins. "We were happy to have a chance to present an educational program that may contribute through increased networking to wider use of these technologies and services."

The politics of implementation

Rep. Major Owens (D-N.Y.), Chairman of the House Subcommittee on Select Education, gave a stirring keynote address. Owens, a sponsor of the Americans with Disabilities Act, a bill introduced into Congress last April, described Gallaudet's "Deaf President Now" protest as a watershed event in the progress of disabled Americans. To effect change, Owens noted, people with hearing impairments must join forces with other disabled Americans—forming a united constituency of 35 million people—to achieve the goal of full access within American society.

Telephone relay services

The first day of the conference was devoted to technical and policy issues regarding telephone relay services, and the second day to the operation and implementation of large-scale relay services in four countries.



Sheila Conlon-Mentkowski, director of the NorCal Center for Law and the Deaf in Sacramento, California, talks about state-mandated relay services in the United States.



Fifteen companies demonstrated new products in telecommunications and captioning during the conference's exhibit. Pictured participants view Ultratec's pay phone TDD.

Paul Taylor of the National Technical Institute for the Deaf (NTID) explained that telephone relay services involve an operator with two independent telephone lines. The operator uses one line to make or receive calls on a TDD. During the relay process, the operator speaks on the other line what he or she reads from the text displayed on the TDD and, in turn, types on the TDD the words he or she hears on the other line. The speech or hearing impaired person can then read and respond to a hearing/speaking person's words as they appear in text on his or her TDD almost immediately after they are spoken.

Taylor presented the consumer's perspective regarding rationale and need for telephone relay services. He used audience participation to illustrate the problems of telecommunication without relay service, by asking several volunteers to react to real-life situations faced by deaf people. Taylor said that the telephone relay services that have sprung up in recent years offer the best available answer to hearing impaired people's wish for fuller, more independent and more private access to the telephone service that hearing people enjoy.

Taylor commented that if everyone owned a TDD, telephone relay services would obviously be unnecessary, but he added that "it would be most unrealistic to expect 245 million Americans to purchase a \$150 electronic TDD just for the sake of calling hearing/speech impaired individuals."

David Hotchkiss of Gallaudet's Center for Assessment and Demographic Studies (CADS) presented an overview of demographic information on the group of people most likely to own TDDs: those with hearing impairments. Hotchkiss noted that survey information on the size, nature and location of the hear-

ing impaired population in the U.S. is too limited to permit a sophisticated market analysis. He added that there are no plans at present to include a question on hearing impairment in the next U.S. Census. Up-to-date information, therefore, will be increasingly difficult to come by in the future. Hotchkiss and his CADS colleague, Dr. Scott Campbell Brown, are currently preparing projections into the next century of the likely numbers of people with hearing loss by age.

The status and limitations of relay services in the U.S.

David Baquis of Washington, D.C.'s Tele-Consumer Hotline reported on a survey of approximately 300 relay services throughout the U.S. His findings help explain the reasons for consumers' frustrations in trying to use relay services. For example, relay services vary considerably in their geographic range of service. Some serve only a few TDD users, such as those enrolled at a particular college. Many are willing to place and receive long distance calls, but primarily serve a local region.

Baquis said that although 40% of the surveyed relay services can be reached 24 hours a day, seven days a week, most handle only emergency calls during non-business hours. Sixty percent of the relay services reported they could handle only one call at a time, making the busy signal a frequent response to users' calls. (The California Relay Service stood out for its ability to handle 100 calls at a time.) Baquis said that 31% of the relay services reportedly announce a time limitation at the outset of each call, 29% announce a limitation on the number of calls allowed that day or in that session, and 22% have content limitations that disallow certain types of calls, such as fast food orders or personal/social calls.

Baquis urged that better, more standardized terminology be created to describe common concepts such as the type of service provided (message relay, dual-party relay, etc.) and the job title of the hearing person who handles the relay call.

State and federal policy

Sheila Conlon-Mentkowski of Sacramento's Norcal Center on Deafness described state-mandated telephone relay services. At present, at least 22 states have begun study or implementation of state-mandated relay services. There is no single model for planning or implementation and the programs are extremely diverse. Conlon-Mentkowski noted a key distinction between state-mandated programs that are regulated and funded through telecommunications mechanisms, such as per-line surcharges, and those that are provided and funded by state government agencies, through the budgetary process. The former method allows for more consistent funding, she said, and removes relay services from identification with other "human services," a characterization many consumers believe is inappropriate for relay services.

Karen Strauss of Gallaudet's National Center for Law and the Deaf (NCLD) pointed out that although many states have begun establishing message relay systems, the vast majority have not, and many that have suffer funding and staff shortages that place severe limitations on telephone access. She said that

because there has been little or no coordination among the states in developing the relay programs, each state is forced to start afresh in making decisions about the funding, operation and standards for its program. The result is that needless duplication of efforts takes place, and critical relay services are delayed pending the outcome of decisions that have been made time and time again in other states. A single nationwide system, with coordination among all of the states, would eliminate these repeated delays.

Strauss also described recent legislative activity, including Senate and House bills mandating a relay service for access to the federal government by hearing impaired people. (Since the conference, these bills have been passed into law.)

Pamela Ransom of the Chicago Hearing Society chaired a panel discussion concerning the financing of relay services. Experts from four states (Stuart Brackney from Arizona, Jack Levesque from California, Pamela Ransom from Illinois and Kathleen Woods from New York) shared their experiences and insights into the political and economic challenges faced in their states. In her summary comments, Ransom advocated the integration of relay services into the existing telecommunications network, as exemplified by New York's approach: "It is this approach which has the greater potential for long-term financial stability, cost-effectiveness and service which is equal to that of the general telephone customer in terms of equal procedural protection and equal standards of service."

Michael Hurst, an attorney who works with AT&T, explained the roles and responsibilities of various organizations, businesses and agencies in promoting relay networks. A successful advocacy plan, he said, must consider the perspectives of the state legislature, the state agency that regulates telecommunications, local exchange carriers and inter-exchange carriers and such executive departments as the governor's office and the departments of commerce and rehabilitation services.

Paul Singleton, vice president of the National Association of the Deaf, discussed trends in the development of standards for relay services. He called on those who have a stake in this issue—telephone companies, consumers, regulators—to form a partnership and to negotiate each issue openly. He echoed a theme that recurred throughout the presentations: that active consumer involvement is crucial to the success of any relay enterprise. Standards must address such issues as blockage (referring to the percentage of calls that encounter a busy signal at the relay service), qualifications and proper training of relay personnel, hours of operation and confidentiality.

Operational issues

Managers of relay services in California, Canada and Sweden described their experiences in implementing their services. Presenters were Phyllis Shapiro, manager of AT&T's California Relay Service, Robert Tolensky of Bell Canada and Borje Nilsson of Swedish Telecom. These managers all reported that the volume of calls in their relay services has escalated, often dramatically, over time. They agreed that controlling blockage is one of the most difficult challenges facing relay services. Tolensky said, "In our situation in Canada, we originally put in 10 positions; we grew to 20 positions; we are growing to 30 positions. There are problems in getting the space . . . problems in getting the equipment . . . problems in getting the operators. . . ."

Esther Schaeffer of Telecommunications Exchange for the Deaf, Inc. (TEDI), a large volunteer relay service in the Washington, D.C., area, presented suggestions for training relay service personnel and for gathering feedback from consumers. She said that TEDI conducts user surveys and has a consumer advisory board and a consumer newsletter. Training of operators includes orientation to deafness and to ASL as well as practical training on how to relay a call.

Karin Lindberg of the Norwegian Telecommunications Administration described training of relay personnel in Norway. Lindberg raised the issue of mental preparation of relay operators to handle personal matters, which at least in Norway has required some adaptation on the part of personnel. Training includes attention to such issues as when to speak the typed message verbatim and when to rephrase the message, as when relaying a call to a ticket office or other location where the hearing person is unfamiliar with the typed communication of some deaf relay users.

Joseph Heil, formerly with AT&T, summarized the situation facing relay services by stressing the importance of coalition-building among disabled consumer groups, telephone companies and regulatory agencies as a key to the successful planning and implementation of relay services.

Real-time captioning

"Real-time" captioning, the simultaneous creation and transmission of verbatim text for display purposes during a live program or event, is a relatively new application of a procedure that has been in existence for over 30 years. The third day of the conference focused on the technology for and uses of real-time captioning.

Dr. Malcolm Norwood, formerly of Media Services/Captioned Films for the Deaf, presented an historical overview of captioning for deaf viewers, and pointed out that September 1988 marked the 30th anniversary of Public Law 85-905, a law that

**Q. WHEN ARE YOU IN
TWO PLACES
AT THE SAME TIME?**

**A. WHEN YOU OWN A KROWN
TDD WITH REMOTE
MESSAGE RETRIEVAL!**

Think of the convenience, anywhere you are . . .

Let's say the club secretary calls your home to remind you about Saturday's dinner party . . . which you forgot to circle on the calendar. Even if you're at work — or out of town for the day — you can call your home and play back messages retained by your Krown TDD's auto answer feature.

Remote Message Retrieval is so easy to use you'll wonder how you ever managed without it! Simply call your phone number, and after the auto answer greeting, type in the password (which you have already stored in the TDD's phone directory). All of your messages will be sent to you.

Remote Message Retrieval is an exclusive benefit of the Krown Memory Printer 20D and Portaview PV20+ TDDs. It is included because Krown engineers know it is human for you to forget details, to be rushed, to try to do many things in a short time. We help you by designing convenience into each TDD.

Enjoy the party! Or call your nearest Krown dealer and he'll help assure that you won't miss the next party.

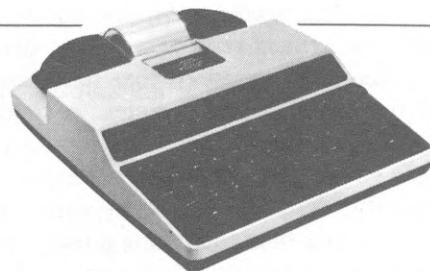
BECAUSE YOU MAY FORGET, WE REMEMBERED.

**Krown
Research, Inc.**

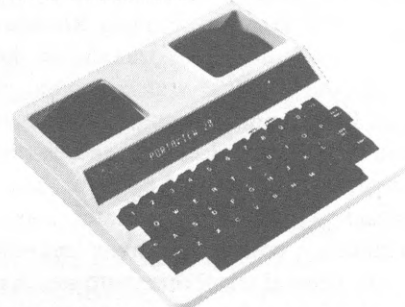
10371 West Jefferson Blvd., Culver City, CA 90232



(213) 839-0181 Voice/TDD in California
(800) TDD-4-YOU } Toll Free Outside California
(800) 833-4968 }



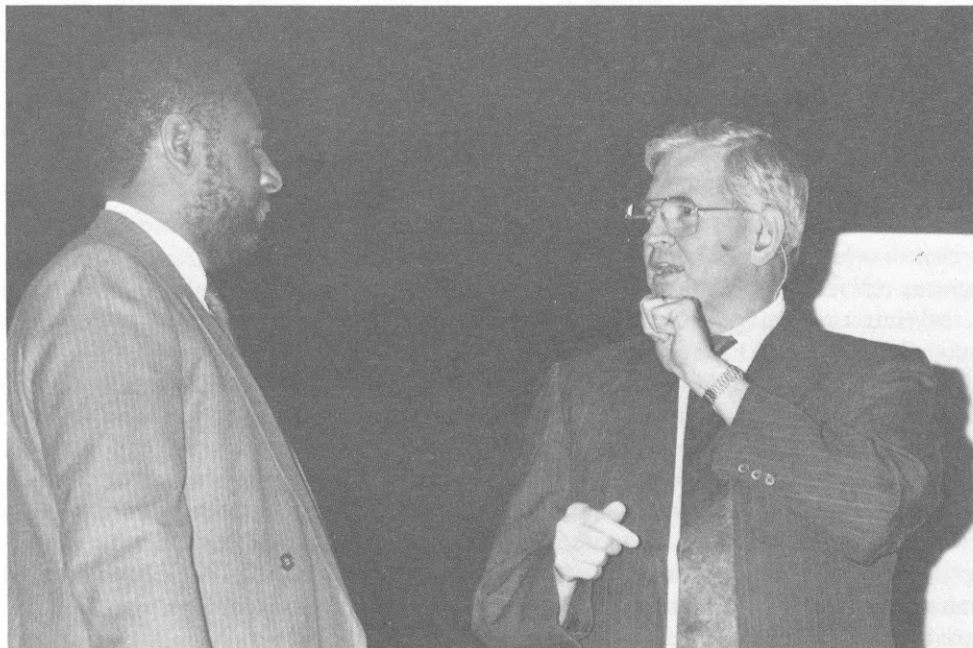
Memory Printer 20D. World's favorite printing TDD for personal and commercial uses. Memory, display screen and thermal hard-copy printer, auto answer, remote message retrieval, keyboard dialing, built-in directory, heavy duty rechargeable battery, carrying case . . . and more. Memory Printer MP20 also available.



Portaview PV20+. Ultimate convenience in a non-printing TDD. Includes electronic voice, 8K memory, and all features of the MP20D except for thermal printer. Economical PV20 Junior and PV20 Senior also available.

ASCII Option. Expand your TDD's communication base with ASCII. Allows you to speak to personal computers. Available with all MP20D and PV20+ TDDs.

**Quality TDDs from Krown Research . . .
the world's oldest manufacturer of TDDs.**



Paul Taylor, an associate professor at National Technical Institute for the Deaf and chairperson of the Telephone Relay Committee for Telecommunications for the Deaf, Inc., does a role-playing exercise with Bob James of the Federal Communications Commission on the need for relay service.

had created the Captioned Films for the Deaf program in 1958. Since that time, Norwood said, the major use of captions has been with previously recorded programs, but as early as 1978 developmental work in real-time captioning was started with the objective of making it possible to caption such live programs as sports events, the Academy Awards, space shuttle launches and news programs. Because real-time captioning occurs primarily during such live, unscripted or partially scripted events as television news programs, classroom presentations, courtroom trials and the recent inauguration of Gallaudet's first deaf president, the technology used to produce the captions must be capable of generating accurate text at speeds as high as 300 words per minute. Jeff Hutchins of American Data Captioning, Inc., noted that "today the only technology available that can create the captions under the guidelines necessary is the shorthand reporting technology." Hutchins noted that only marginal improvements can be made in this technology, which in the current state of the art performs quite well.

Dr. Bill Oliver, president of the National Shorthand Reporters Association, explained that traditionally stenograph reporters have captured the speech of others by entering a coded input that resulted in a printout of the codes on paper. Ordinarily the operator of the machine later reads that code and transcribes it into written English. In real-time captioning, the stenograph equipment is linked to a computer that translates the codes into English and displays the words on a screen or disk.

The shorthand notation generated on the 23-key stenograph machine requires the reporter to strike the keyboard as many as four to six times each second. Accuracy rates among professional reporters, Oliver stated, can be as high as 99% (one error

in every 100 words). But because the code is phonetically based, the computer must be programmed with a dictionary that can translate the phonetic entries into their English equivalents. Unexpected names and unusual words not in the computer's dictionary can result in mistakes—some confusing and other amusing—such as producing "plow ducks" instead of the word "products."

"Open" versus "closed" captions

When broadcast over television, the captioned text can appear as either open or closed captions. Open captions are superimposed over the image on the TV screen and are part of the regular broadcast signal, accessible to everyone. In the U.S. system, television pictures are made up of 625 lines of electronic data, but 21 of these lines do not carry picture information. Closed captions are thus able to be transmitted in the form of an electronic code on line 21 of the TV picture and are visible only to viewers with a special decoding device.

Most TV programming is pre-recorded, so the captions can be produced before the programs are aired. Linda Carson from the National Captioning Institute, Inc., explained the processes necessary to produce captions for both prerecorded and live television programs. The pressure on the real-time captioner can be tremendous. "The captioner has only one opportunity to hear and enter the audio correctly," explained Carson.

If the captioner hits the wrong key, misunderstands the audio or the computer isn't programmed to translate a particular word, the caption will contain a mistake and everyone out there is going to see it . . . Anything can go wrong. Equipment might fail, the speaker might have an accent and be nearly impossible to

understand. Two or more people might be talking at the same time, or the real-time captioner might sneeze and miss something important.

In the beginning of closed captioning, few TV programs were captioned, none on a real-time basis. The number of captioned programs has increased significantly so that now, Carson reported, over 60 hours of regularly scheduled network programming are real-time captioned each week, including the evening news on all three networks (NBC, CBS and ABC). Only a few local news programs are real-time captioned, however, and the demand for real-time captioning in such settings as churches, classrooms, courtrooms, lecture halls and public meetings is growing as deaf and hearing impaired individuals become more aware of the advantages provided by such technology.

Captioning applications in situations other than television were discussed by Dr. William Cutler of Self Help for Hard of Hearing People, Inc., who discussed the concept of captioning as an interpretive medium; E. Ross Stuckless, who described the ways in which captioning is used in educational situations at the National Technical Institute for the Deaf; and Daniel Hinton, senior communications engineer at Science Applications International Corporation, whose application of captioning technology provides deaf-blind individuals access to a braille presentation of captions.

What does the future hold?

In the final presentation on real-time captioning, Dr. Marin Allen, chairperson of the Gallaudet Department of Television, Film, and Photography, called for research on some of the "humanistic, cultural and phenomenal requirements" of captioning systems. The hardware is here, she said, but the standards are not based on research concerning the needs of deaf viewers. In examining captioning, for example, little is known about the influences of speed of presentation, linkage of presentation with image, movement of the image relative to the caption and how these factors affect the perception of the captions. Needed are efforts to learn "as much as possible about the creature (captioning) we have created and (to) find out from the deaf community the needs that are most important to them."

Automatic speech recognition technology

While relay services and real-time captioning are current applications of well-developed technology, automatic speech recognition technology is still in its infancy. The goal of programming a computer to recognize normal conversational speech and convert that speech into either text or synthetic speech is still basically a dream. Although the possible application of such technology ranks high among the concerns of deaf individuals, until recently only limited research had been conducted and few prototypes developed to convert that dream into reality. The fourth and final day of the Speech to Text conference was spent exploring the frontiers of speech technology.

The field is young, pointed out James Glenn, manager of development programs at Entropic Speech, Inc., and editor-in-chief of *Speech Technology* magazine. There are people from a variety of disciplines involved in speech recognition technology today, including engineers, linguists, mathematicians, medical personnel and psychologists. Standardizing terminology is a problem when such diverse disciplines are involved, Glenn noted, but the National Bureau of Standards has recently at-

tempted to establish some uniformity in terminology.

Using some of the standardized terms, Glenn then presented a basic overview of the field of automatic speech recognition. There are about 40 to 50 products on the market today involving speech recognition technology, and 10 to 12 of these can be plugged into a personal computer. However, there are no currently accepted standards for assessing the performance of these automated speech recognizers, Glenn pointed out, and the usefulness of the different equipment varies considerably.

Existing strategies for implementing automatic speech recognition range from the simplest systems that have only a limited vocabulary of single words or short phrases spoken in isolation to systems that rely on both acoustic information and language statistics in the decision process necessary for speech to text conversion.

Although it is possible today to "talk" to and through computers, the "conversation" is limited by several factors. Automatic speech recognition can be categorized both by the manner of speaking required—for example, speaking either in isolated words, connected words or continuous speech—as well as by the technology's accommodation to the speakers—through recognition that is either speaker-dependent (recognizing only one specific individual's speech), speaker-independent (recognizing a variety of speakers) or an automatic adaptation or modification of existing machine representations of specific sounds (a technique that could be used to accommodate changes in voice patterns due to speaker fatigue or stress). Speaker-dependent recognition systems can be programmed to understand "unintelligible" speech as long as the speaker is consistent in the production of the sounds.

Issues to consider

Unfortunately, there are several ways an automatic speech recognition system can make errors, including deleting or ignoring correct words, inserting incorrect words that were actually caused by background noises rather than by the speaker, accepting as correct words that are not in the machine's active vocabulary, or substituting the wrong word for the correct word. Some automatic speech recognition devices have very small vocabularies and require extensive training time by the speaker, while others have higher than acceptable error rates.

The human element, another critical factor to consider in a discussion of automatic speech recognition, was emphasized by Dr. Judith Harkins, Director of the TAP. Who are the individuals who will be using the system? Is the hearing person willing to alter speech enough to accommodate the limitations of the equipment? Is the deaf user's motivational level and tolerance for frustration sufficient for the extensive training required on some systems? Who will purchase the equipment? Are there enough potential customers to make development and manufacture of automatic speech recognition equipment worthwhile to businesses?

Harkins pointed out that user setting and alternative methods of communication are also issues to consider. Is it possible to control adequately the users' environment and limit background noise, thereby reducing the error rate? What are the available alternatives to automatic speech recognition in any given situation? In some instances, Harkins said, using an interpreter, pencil and paper, a relay service or speechreading

may prove to be more efficient means of communicating than automatic speech recognition systems.

Demonstration of two systems

To give the audience an idea of the state of the art in automatic speech recognition, the Speech to Text conference featured demonstrations by two companies well known for their work in developing speech-to-text technology.

Dr. Steve DeGennaro of IBM demonstrated its Tangora Speech Recognition system, which is not at this time commercially available. Tangora is a long-term project of IBM's Thomas J. Watson Research Center. The system operates on an enhanced IBM-AT. It is a speaker-dependent system with a 20,000 word vocabulary designed primarily for an office environment. During his demonstration, Degennaro pointed out that the accuracy of speech recognition systems can be affected by the quality of the microphone. Telephone systems have microphones that are not sophisticated enough to convey speech in a refined enough form to enhance the recognition system's capacity.

The Kurzweil VoiceWorks, demonstrated by John Scarcella of Kurzweil Applied Intelligence, is a commercially available system. The VoiceWorks is speaker-dependent, with a 5,000 word vocabulary, and is available for approximately \$6,500, excluding the cost of the computer. The company is actively involved in the development of applications software to tailor the system to particular needs. For example, Scarcella demonstrated a package designed specifically for radiologists to dictate reports, using key words to produce whole sentences, while their hands and eyes are busy examining X-rays.

Future applications are varied

Dr. Jared Bernstein of SRI International emphasized that

currently available speech recognition systems are not perfect, but asked, "Given what the state of the art is in speech recognition, what sorts of things could you do with speech that would be useful for hearing impaired people in particular?" Despite the current limitations in hardware capability, the applications of automatic speech recognition technology in the lives of deaf and hearing impaired individuals still capture the imagination: "verbatim captioning," conversion of unintelligible speech to understandable synthetic speech, conversion of speech to braille for deaf/blind individuals, automated telephone relay services, voice-activated environmental and mobility control for mobility-impaired people—the list goes on.

During the closing discussion period, led by Alfred Sonnenstrahl, executive director of Telecommunications for the Deaf, Inc., conference participants shared their ideas in response to Sonnenstrahl's question, "Where do we go from here?" It became clear that more conferences such as this one are needed to provide a forum for consumers, technicians and service providers to share information and ideas with each other and thereby advance progress in such areas as telephone relay services, real-time captioning and automatic speech recognition as these technologies apply to the needs of deaf and speech/hearing impaired people.

Proceedings will be published

Proceedings of "Speech to Text: Today and Tomorrow" are targeted for publication early in 1989. The price has not yet been determined. To be placed on a mailing list for information on availability of the proceedings, write to Barbara Virvan, Technology Assessment Program, College Hall, Gallaudet University, 800 Florida Ave., N.E., Washington, D.C. 20002.

UNDECIDED ABOUT A GIFT FOR SOMEONE???



GIVE THEM AN NAD GIFT MEMBERSHIP!!!

You won't even have to leave your cozy home to send them the gift!



Your gift membership announcement will be printed on quality linen paper with matching envelope and mailed to the person on your guest list upon receipt of membership dues. Members also receive The NAD BROADCASTER, The DEAF AMERICAN, and a special 20% discount on single copies of NAD publications purchased for their personal use.

- * Individual membership.....\$25.00
- * Husband/wife membership.....\$35.00
- * Family Membership.....\$45.00

There is no limit on the number of gift memberships you can order. Use a separate sheet of paper if necessary.

YES! I want to give an NAD gift membership to:

Name (please print)

Address

City/State/Zip Code

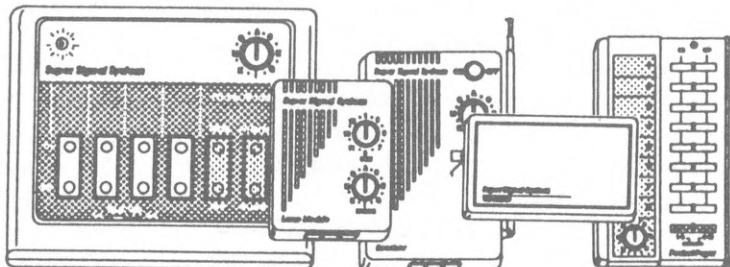
Enclosed is a check of \$

This gift is from:

Mail coupon to: NAD Membership Department
814 Thayer Ave., Silver Spring, MD 20910

Ultratec Super Signal System

Today's most advanced technology in a Signaling System. And at the lowest cost available.



QTY	PRODUCT	UNIT PRICE/ SHIPPING	TOTAL COST
Signaler Units			
_____	Smoke Detector	\$39.95/\$2	_____
_____	Phone Module	\$29.95/\$2	_____
_____	Transmitter	\$29.95/\$2	_____
_____	Receiver	\$29.95/\$2	_____
_____	Lamp Module	\$16.95/\$2	_____
_____	Appliance Module	\$16.95/\$2	_____
_____	Pocket Pager	\$19.95/\$2	_____
_____	Alarm Clock	\$39.95/\$2	_____
_____	Smart Switch	\$16.95/\$2	_____
_____	Wall Outlet	\$24.95/\$2	_____
Signaler Packages			
_____	Smoke Detector/Receiver	\$64.95/\$4	_____
_____	Phone Module/Lamp Module	\$39.95/\$2	_____
_____	Clock/Lamp Module	\$49.95/\$3	_____
TOTAL			_____

☐ **Please send me your Products Brochure**

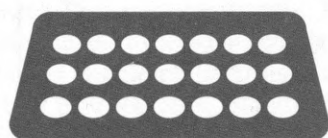
Enclosed is my check for \$ _____

Name _____

Address _____

City _____ State _____ Zip _____

Complete Satisfaction Guaranteed!



Chaney Super-TDD, Inc.

7744 La Cabeza Drive • Dallas, TX 75248

TDD:214/239-9570 VOICE: 214/239-1818

On Being 'Different' And Making A Difference

By JACK R. GANNON

So many years have passed, but I still remember Willie. He was a black bootblack in the small southern Missouri town where I grew up. Willie and I had a common bond—we were both deaf.

He must have been in his 60's when I first met him when I was a little boy. He was tall and lanky, and had stooped shoulders and long, bony fingers. A crown of black and white fuzz ringed his bald head. (It looked like someone had sprinkled salt and pepper on it.) Gold capped teeth glistened when he smiled his ear-to-ear grin—which was often, because he was a happy person.

Because he did not speak, Willie was known as "Dummy" to the townsfolk. He was the best bootblack in town. He took great pride in his work and had a knack for pleasing his customers. He earned 20 cents a shoe shine. When shining a pair of shoes, he would go through an imaginary dance act which always amused his customers and, when he was through, he would take a low bow to signal that the job was done. Then he would straighten the customer's collar or brush off his jacket. In the process he would turn and wink at me to tell me to watch the results. It seldom failed to earn him a hefty tip.

At the end of the day Willie would sweep the barbershop with his long push broom, put away his shoeshine equipment, button up his aged blue pin-strip vest, don his jacket and hat, get his cane and head for home. He'd shuffle down North Main toward the section of the town where all the black people then lived. As I watched him go I saw the perfect image of a proud, successful businessman going home after a day's work. To many, however, Willie was deaf, mute, black and "different."

Willie reminds me of the professional consultant I know who was once asked what he would like to see engraved on his tombstone. (What a strange and bizarre question to have to answer!) The consultant, whose job involved working with alumni and public relations organizations around the nation, thought a moment. "Four words," he said. "I'd like to see my tombstone read: 'He made a difference.'"

These are difficult times for many of our special schools. Many state education administrators and parents want to change the way we educate deaf children. They want to mainstream deaf children—place them in public schools near the child's home. They hope that, by doing this, these deaf children will become more a part of society. I'm sure their intentions are sincere, but so many of them know so very little about the deaf community and much of what they know was learned from a distance. Many of these persons are not aware of the real value of our special schools. All that many of them

see is that deaf children (and adults) are "different." Of course we are different! We have a right to be!

Many of these educators and parents do not realize—or chose to ignore—how important our special schools really are. They offer a free communication environment not found elsewhere. They have curriculums specifically designed for deaf children and taught by specially trained and dedicated personnel. These schools provide more opportunities for full participation and more peer competition. They are educational gold mines, rich in history, culture, pride and filled with examples of successful role models. Most important of all are their success stories which, unfortunately, many do not know about.

Today our schools need the support of their alumni more than ever before. We must make sure that these schools remain an important option in the continuum of educational opportunities for deaf children. Some can succeed in mainstream programs. Others need these special schools and there must always be that choice. We and our friends must do a better job of educating and convincing people why these schools are so important.

We cannot stand in the way of change, but we can influence it. We, as individuals, through out state and national associations and other organizations, must work together to influence change in a way that will benefit all deaf people. Some people believe that profound deafness will be a thing of the past within the next few decades. That may happen, but until it does, we must continue to work for the common good of all deaf people. We must bring the needs of deaf people before state legislatures and governing bodies. We must do more to educate the general public and help orient new parents of deaf children to deafness. We need to introduce them and deaf children to our rich culture and history and share with them our pride and success. We—not they—must take that extra step, go that extra mile. We must exhibit patience and understanding as they struggle to cope with a world that is so new and strange to them. We *can* make a difference.

Of all the people I have met in researching deaf history, those deaf individuals who stand out the most are people who were not afraid to be different. They learned to fly; dared to become doctors and dentists; established their own businesses. They ran for public office; wrote poetry; published newspapers; pioneered new fields; broke into professional sports. They dared to be different! Some succeeded, some failed—no matter. By trying, they made a difference. Others learned from them and because of them. Being different is our right, and the key to making us the individuals that we are. And, each one of us is important—no matter what we do. History keeps telling us that.

If people like Willie can make a difference—then so can you and I.

Dr. Gannon is executive director of Alumni Relations and Advancement and executive secretary of the Gallaudet University Alumni Association of Gallaudet University. He is a graduate of the Missouri School for the Deaf and GU and a former teacher. He is the author of *Deaf Heritage, A Narrative History of Deaf America* and a forthcoming book, *The Week the World Heard Gallaudet*, which is due out in February.

Mainstreamists In Special Education A Separate Reality

By LARRY G. STEWART

Prologue

Recently I had a dream. A dream about mainstreamists. Yes, I said mainstreamists. Hey, wait up! Maybe I'll explain what that means in a minute.

You see, I'm thinking of telling you of my dream. It was actually a sort of nightmare, come to think about it. It combined some of my personal experience, some of what I read over recent months, and, oh, elements of fantasy. The nightmare, I mean dream, struck me as somewhat funny at the time, but it was really sort of weird and sad and worrisome too. I guess I ought to tell you about it.

O.K., I think I'll do it. I must admit that on paper it may sound sort of like a tongue-in-cheek tale of mainstream extremists, or mainstreamists (that silly word showed up in my nightmare, would you believe? I mean dream). I even dreamed the word mainstreamist would become a part of the English language. Ha! Can you imagine!

All right, I'll do it. Tell you of my nightmare, er, dream. I'll call it a tale because you won't even believe I dreamed it.

The tale begins and ends in a strange place—a remote region of Mexico. In-between it's an amazing story of a separate reality. This separate reality consisted of "verbal sorcery" or witchcraft as practiced upon—would you believe—special education!

It all starts with Carlos Castaneda. Now this Castaneda is a contemporary anthropologist. I truthfully read that he was trained as a scientist at the doctoral level by the world class University of California at Los Angeles (UCLA). So what does he do but show up in my dream-nightmare-tale?

Carlos Castaneda is a highly unusual man. Despite his UCLA training, he mastered sorcery, or witchcraft, under don Juan Matus, a Yaqui Indian sorcerer, and don Genaro Flores, a Mazatec Indian sorcerer. This was accomplished through several years of intermittent periods of intense training and experience in remote regions of northern and central Mexico. Some of this study took place under the influence of ancient psychedelic drugs—peyote, datura and mushrooms.

Emerging from these experiences as a high ranking sorcerer himself in the strange time warp created by modern Los Angeles and ancient Mexico, Castaneda has produced *A Separate Reality*, *The Teaching of Don Juan: A Yaqui Way of Knowledge*, *The Eagle's Gift* and other extraordinary novels of his special spiritual journey. At once entertaining, amusing and strangely haunting, Castaneda's books portray the powerful capacity of the human mind for unsurpassed enlightenment and growth as well as destructive, and at times even evil, self deception.

Now I need to explain something to you before I tell my tale. That is, I had a hard time, and I tossed around plenty while I was dreaming, trying to figure out what Castaneda and his sorcery tutors, don Juan and don Genaro, were doing in my, ahem, dream. As I found out, though, they did provide an amusing frame of reference for considering the main part of my dream—a separate reality that has descended on special education in America since the passage of Public Law 94-142, the

Education for All Handicapped Children Act of 1975 (EHA).

In my dream, someone told me—I can't figure out who—that the EHA was a fine law, and it had been a vast boon to many handicapped children. At the same time, paradoxically, the regulations of EHA had turned out to be an often-destructive force in the education of many deaf children and other groups of handicapped children.

That someone in my dream went on to explain—man, was my dream a verbal dream!—that mind-boggling "verbal witchcraft" was being used by bureaucrats and lawyers from the U.S. Office of Education and state departments of education today as they maneuvered to ensure the placement of all handicapped children in public schools. The commitment of these bureaucrats, I was told, was to a totally arbitrary interpretation of the concept of "least restrictive environment," supposedly based on the EHA (see *Least Restrictive Environment: Commitment to Implementation*, Proceedings of National Leadership Conference 1987, Indianapolis, Indiana, May 20-21, 1987).

In my dream, I was told (I remember the signing hands now; I don't dream in sounds any more. That's the deaf way, mainstreaming or no mainstreaming! I'd like to see those lousy bureaucrats try to regulate dreams) that the verbal wizardry of these bureaucrats and lawyers would surely cause Castaneda, don Juan and don Genaro to look around Washington, D.C., and the various state capitals to find the unusually powerful peyote or mushrooms they would be convinced these mainstreamists were surely using!

My dream narrator (I recall now, he was dressed in a hood and used ASL) told me that most of all, Castaneda and don Juan and don Genaro, gifted at harnessing their minds and using words to get themselves and others to believe whatever they wanted to believe, would surely roar with mirth over the highly artistic verbal witchcraft used by government bureaucrats to convince anyone and everyone that "free appropriate public education" means "having all handicapped children sitting in a classroom in public school" (whether they are learning anything or not), and that this end result is the sole purpose of P.L. 94-142.

About my tale, I've decided to tell it in "high speed frames or snapshots" (how else could this slight-of-mouth I am about to share with you be captured?) of the mainstream "wizardry" being practiced today to create amazing illusions concerning P.L. 94-142 and its meaning for children with handicaps. Oddly, the main character in my nightmare was someone I've read about but never met—Dr. Thomas Bellamy, Director of the Office of Special Education, Office of Special Education and Rehabilitation (OSERS), United States Department of Education. Dr. Bellamy showed up in my dream as a modern day verbal sorcerer, accompanied by two small characters, who appeared as his court jesters: Wayne Sailor, Department of Special Education, San Francisco State University; and Michael Hardman, Department of Education, University of Utah.

And now my dream-nightmare-tale.

A Basic Societal Value: A School's Accountability for Educational Outcomes for Students with Handicaps

Opening Snapshot. It all started at the 1987 National Leadership Conference on *Least Restrictive Environment: Commitment to Implementation* in Indianapolis. For some reason, I found myself there as a narrator much in the fashion of Ishmael in *Moby Dick*. Mainstream education advocate Thomas Bellamy had the incongruous title of Mainstreamist-in-Residence, and was scheduled to address the issue of values in special education, with special emphasis on mainstream education. As he began his presentation, for some reason I found I could understand him even though there was no interpreter and I could not hear (Ah, dreams)! As I looked around, Bellamy was advocating for explicitness in what it is that individuals with disabilities deserve from society. He proposed:

. . . special education should be responsible and accountable for its products . . . It is only reasonable that we hold ourselves responsible—and that society hold us responsible—for what happens to people with disabilities after they leave school . . . Increasingly, the research literature focuses on quality of life as the outcome toward which we are striving.

From the standpoint of the special education professional community, I think it can be said fairly simply: Special education is successful when people leave school with a job and the skills to perform the job either independently or with affordable support; with a place to live, and the skills to live there, either independently or with affordable support; and with a social network of friends and contacts and neighbors that provide the sustaining support and the opportunities that the rest of us get from the people we live around. If people can leave special education with these three things, I think we have done our job.

Bellamy (1987, P. 2)

For some reason, Bellamy's statement struck me as being excellent. I remember my guide/narrator telling me that it was a fine statement of the way things should be in public schools in America for children having disabilities. Perhaps, he pointed out, we should even enshrine the words in a national hall of honor alongside the American flag, motherhood and apple pie!

And now my dream takes over. You are there.

More Snapshots. Yet halt! There is a pause to ponder a second high speed snapshot. Witness this: Even as Bellamy used his left hand to present this attractive agenda for validating America's special education efforts, his right hand was busily at work waving mirrors and dispensing clouds of smoke that were designed to obscure. To wit: Despite the enormous funding and far-reaching research resources of the U.S. Office of Education and its captive state departments of education, wizard Bellamy did not name one single solitary research study of outcomes of educational services for children with handicaps in the mainstream setting (or anywhere else for that matter), let alone one that utilized the laudatory outcome variables he cited so proudly.

Perhaps wizard Bellamy realized the desirability of appearing to present some sort, any sort, of objective basis for his

remarks as he slowly began to cast "That Old Mainstream Magic" spell on his audience of trained but apparently highly suggestible special educators in Indianapolis in 1987. Thus did Bellamy, perhaps begowned Merlin-like fashion (and incidentally assistant to long-term mainstreamist high priestess and wizardess Madeleine Will), put forth an incantation of magical words:

" . . . the results of the follow-up studies that are now being reported are not very complimentary in terms of special education's past reach . . ." (1987, p. 2).

Bellamy's wizardry misfired here, however. It caused even his loyal assistants and devoted mainstreamist groupies to cringe and shudder with dismay. You see, P.L. 94-142, and mainstreaming, had been in effect for close to 13 years at the time of Bellamy's incantation in Indianapolis. His intent, clearly, was to say "Fie! Fie on you I say!" and put a hex on pre-1975 special education. Thus would it disappear, shamefully, in a small, slowly dissipating puff of acrid smoke, perhaps first hanging momentarily in the quiet air before the admiring audience. As wizard Bellamy attempted this feat, however, his rigidly outstretched arms and quivering, widespread fingers unloosed a charge of lightning that, leaping across the stage, hit not only pre-1975 special education but also, horrors, his very own child, post-1975 mainstream-oriented special education. And thus were both scorched and left blackened and humbled ash heaps at his feet.

Yet, not to worry; no lasting harm was done either way. As the next high speed snapshot revealed, Bellamy's crackling discharge of lightning and pronouncements of "fie upon thee" turned out to lack any real hexing power. That is, he left out of his magical alchemy the element that would have made it all work: Mention of even one of those terrible, damning "follow-up studies that are now being reported" and, of course, any of the specific findings from a single such study.

Only slightly scorched himself by his poor performance, Bellamy was now wild-eyed with shame and mortification. Quickly recovering while mumbling to himself, he righted his conical hat and glared about as if expecting mocking laughter. None came, for devotees to mainstreaming, as the audience was, are an uncritical lot. Thus, only confident, expectant silence wafted about in the darkened room. Spotlight full upon him, Bellamy, encouraged, gathered himself to his full stature, cast his arms and hands out dramatically once again, braced his body firmly, and flung his head back. He then roared out the mainstreamist apologia in deep tones that shook the great meeting hall:

" . . . The special education system is not perfect by any means, but it is working, and far better than many of us would expect any federal public program to be working after only ten years." (1987, p. 4)

Once again blue-white lightning crackled and flashed. Unbearable claps of thunder shook the room (it was unbearable, you see, because there were no deaf people in the audience who could bear it. Lucky me, Bellamy surely thought to himself, for he was wont to greatly fear the rotten eggs and

over-ripe tomatoes deaf people reserved for mainstreamists). The audience cringed and flinched and cowered as they yet keenly anticipated the wonders to come. Mainstreamist groups waited expectantly even as they held hands and hunched closer together in trepidation. As the lightning ceased and thunder no longer rent the atmosphere, with the smell of sulfur and brimstone now all about, lo and behold, pre-1975 special education as well as post-1975 special education gleamed on the horizon, both of them shining and new!

Alas, once again Bellamy's sorcery had badly misfired, hitting all of special education and renewing with golden splendor both its old and its new domes that spanned both the past from the beginning of time on to the infinite future ahead.

Yet, see the snapshot, once again Bellamy's lightning and thunder lacked penetrating power: As strong and powerful as he and his office were, he was left with no evidence in his bag of alchemy to support any thesis that special education, perfect or otherwise, mainstream or sidestream or upstream or downstream or jetstream or slipstream, "... is working." Not one single research study was cited to give potency to his sound and fury, and thus was revealed his substanceless routine of swirling smoke and dancing mirrors.

All this time as Bellamy was shooting lightning and thunder around the meeting room, his faithful court jesters, Sorcerer Apprentices Wayne Sailor and Michael Hardman, were filling in the unavoidable time gaps. At one point, referring to the demonstration by members of the deaf community that was going on outside the meeting hall, Sailor did a back flip, grinned buffoon-like and quipped:

Outside . . . there is a demonstration by people who

Another Major Societal Value: Local Schools for Everyone

Wizard Bellamy, hands and face blackened with soot and shoulders hunched in frustration, was thus by needs impelled to resort to still another try at weaving his spell to the haunting strains of "That Old Mainstream Magic." Calling once again upon his best powers, Bellamy summoned his waiting heralds and, scroll unfurled, loudly read in somewhat quieter yet still unctuous pronouncement his second world-shaking societal value with respect to people with disabilities, to wit:

Local schools should be for everyone!

Bellamy, now thoroughly excited and able to contain himself no longer, puffed up like a toad. Instantaneously, magically, he was transformed into a black-robed, white-powdered wig-bedecked barrister. The audience gasped; they were in a packed Old Bailey, the famed English court of law. Barrister Bellamy, glaring at all and sundry, then declaimed sonorously that P.L. 94-142, the Education for All Handicapped Children Act of 1975, favored the regular education environment (never mind that Old Bailey is in England and has nothing to do with American schools; what the heck, illusions allow all sorts of departures from reality). Pausing momentarily, and then next taking on what he imagined was the wise look of Solomon (but actually gave the audience the disturbing impression that he had acute gastric disturbance if not inflamed p-l-s), Bellamy added, pontifically, as he reached up and spread his arms and hands in supplication to the heavens:

are deaf. Their argument is that the least restrictive environment for students who are deaf is not the regular public school. I hope that their position will change . . .

After another back flip, which ended with Sailor landing on his head but then getting up and grinning, unfazed due to the wondrous thickness of his cranium, he went on with further foolish talk:

In the long run integrated services work better . . . I don't think anybody who is deaf wants to tell a parent of a severely disabled child that they should not be able to have their child in a regular school with all the benefits that occur there.

Sotto voice, so low that others could not hear him, Jester Sailor muttered as an aside to himself and to the gods on Olympus, "What benefits, eh good Jester Sailor? Isn't it wondrous to sit around all day, as deaf students do in most public schools, not understanding anything? So very educational, right! Ah, as a non-deaf person your own self, as one who does not have the slightest idea of what it is like to grow up deaf in public school, what qualifies you, sire, to pass judgment on what deaf people are saying or would perchance say, or what they do or do not wish to tell others? How extremely ironic that you, good Sailor, would thus speak in such manner as to pawn thyself off as a spokesman for deaf persons, ye who have not spent a second of your life deaf, when the EHA was built around the concept of protection of the rights of handicapped children and their parents and not the dogma and ranting of crazed, fevered mainstreamists such as thyself and yon Bellamy! Ah, irony of ironies! Ah, vanity of vanities!"

The law stipulates that we remove people from the regular education environment only when absolutely necessary, and only so far as absolutely necessary to meet individual educational needs. (Bellamy, 1987, p. 3)

Truly deafening thunder crashed down on Old Bailey. Hearing aid vendors gathered outside.

Blinding lightning spread and forked in jagged bolts from Barrister Bellamy's hands. Outside, sunglasses wholesalers joined the hearing aid vendors; all eagerly awaited the exeunt and mad dash for surcease from the cacophony and visual chaos inside by the numbed, by now sensory-overloaded participants.

The lights of Old Bailey flickered briefly; complete darkness and total silence then descended while everyone cowered and quaked, moaning in mingled acute fear and divine rapture.

The audience in unison peered over the backs of the seats, only to gasp sharply; they were no longer in Old Bailey but were now back in the meeting hall.

There, sitting on the floor in the middle of the stage, spotlight full upon him in the midst of a surrounding total darkness, sat wizard Bellamy, legs spread out in front of him, conical hat awry, hands and face covered with even more soot. He was staring mutely at the blackened hands he held before him, head swinging slowly, ever so slowly, from side to side, unbelievably, now in acute frustration.

Once again, Wily Coyote fashion, Bellamy had miscalculated. His illusion-casting magic had created not a captivating spell upon his audience but mind-rending chaos and bewildering disorientation. His utterances had lacked a shred of credible evidence from research to sustain them. Rather, mainstreamist-cum-wizard-cum-barrister Bellamy—who incidentally and in reality is a highly placed federal government official whose job is to know and to explain federal education statutes and regulations to parents and professionals and other citizens—had used incorrect information in mixing his magical potions. To wit, the law DOES NOT stipulate as he so claimed. This “absolute necessity” Bellamy uttered so authoritatively is a creation of his own mind, a mind perhaps fevered by the emotion-arousing mind-impairing drones and throbs of “That Old Mainstream Magic.”

Simply put, Bellamy was wrong. He landed on the seat of his pants under the spotlight for all the world to see because he was wrong. In reality, this is the actual wording of that part of P.L. 94-142 that Bellamy misquoted so badly!

. . . to the maximum extent appropriate . . . special classes, separate schooling, or other removal of handicapped children from the regular educational environment occurs only when the nature or severity of the handicap is such that education in regular classes with the use of supplementary aids and services cannot be achieved satisfactorily. 20 USC 1412.

As the clear light of a sunny day shows, there is no indication of anything “absolute” about keeping anyone in (or out, for that matter) of mainstream classes. This point is made even clearer in the Code of Federal Regulations (1983). Specifically (see Procedural Safeguards, 34 CFR Part 300, Subpart E, Least Restrictive Environment):

Reg. 300.550 General.

(b)(1) . . . to the maximum extent appropriate, handicapped children, including children in public or private institutions or other care facilities, are educated with children who are not handicapped, and

(2) . . . special classes, separate schooling or other removal of handicapped children from the regular educational environment occurs only when the nature or severity of the handicap is such that education in regular classes with the use of supplementary aids and services cannot be achieved satisfactorily.

Smoke and mirrors and sound and fury aside, only the committed extremists such as the mainstreamist is truly adroit at stretching words so much that one may proudly and unblinkingly equate such disparate words as “appropriate” and “absolute necessity.”

As Bellamy sat and pondered dazedly, on stage bounded Sorcerer Apprentice Hardman, grinning and waving his hands windmill fashion while doing a fair-to-middling shimmy. Next executing a wild double back flip and landing on his intrepid, unassail-

able mainstreamist head, Hardman arose with little apparent effect from the floor rattling fall, hitched up his jester trousers, thrust out his chest and cried out while laughing between sentences:

I’m going to ask if there are any validated assumptions for the continuation of segregated educational facilities in the United States. Is there anything that would validate the continuation of segregation? As we look at the United States, there is one last bastion of sanctioned segregation in the United States and that is the segregation of people with disabilities in the education system. It is the last sanctioned segregation. We know that there are still other forms of segregation going on, but those are not approved forms of segregation, not social policy. Yet within the United States, there is still acceptance of segregation for students with disabilities.

Pausing momentarily, the court fool covered his mouth and whispered gleefully to the gods while giggling insanely: “Never mind that Public Law 94-142 legally mandates the continuation of special classes and programs and schools in each state’s continuum of services for handicapped children. We, the true mainstreamists that we be, do not care in the slightest that the EHA mandates equal attention to improving programs of instruction for handicapped children in day or residential facilities. We can and we will twist words around like nobody’s business so that the law means what WE want it to mean, and fie on the Congressmen who wrote the law!”

Swaggering around in mincing steps, chest thrust back, Jester Hardman continued, in Hamlet-like “To be or not to be” fashion:

We hear the argument, “We need to maintain segregated educational programs because they are a part of the continuum.” That is not the issue. The issue is how you go about determining individual need according to the law: You start with the regular education classroom, and every movement away from that regular classroom must be justified. You must clearly document why a student should be moved into more restrictive environments. However, what we find in the education system is that, because we have facilities—separate facilities—out there, we are forced to fill them.

Jester Sailor then rushed up and grabbed Hardman’s arm, screaming and jumping up and down excitedly, “Man, you did it! You managed to throw in all those damning words in one outburst—segregated, continuum, individual need, law, regular classroom, restrictive environments, separate facilities, force! Wooooo! Ye shall be promoted to full Sorcerer ere the day is out!” Together, the fools wandered off stage, whispering and giggling.

Nearing the end of his time on the stage at the 1987 LRE Conference, Bellamy’s ideological fervor clashed even more

The Separate Reality Dissolves

loudly with the fact of the bankruptcy of his reality testing in the area of special education. In discussing the challenge of special education to public school instructional staff, Bellamy, unaware that his spell was totally ineffectual, contradicted his earlier assertion that mainstream special education "is working" (Remember? "... The special education system is not perfect by any means, but it is working, and far better than many of us would expect any federal public program to be working after only ten years.") That is, he gave the lie to much of what he has asserted earlier:

Integration is not the same as education . . . Do we in fact have a curriculum that takes advantage of regular school placement? Do we have a systematic mechanism for fostering attitude change or building positive attitudes among peers? . . . This challenge is to make sure that the rhetoric and the reality of local school placements match. (Bellamy, 1987, p. 6)

And, my guide/narrator spoke cynically, we would add this is a challenge Bellamy and his fellow mainstreamists should be forced to meet in full measure before they insist on placing all handicapped children in public school classrooms, willy-nilly.

Unaware that we were watching what he was doing with his right hand AND his left hand, Bellamy contradicted his earlier statement about outcome studies (Remember? "... follow-up studies that are now being reported are not very complimentary in terms of special education's past reach," and "The (mainstream) special education system is not perfect by any means, but it is working, and far better than many of us would expect any federal public program to be working after only ten years.") That is, he stated, while discussing challenges to state and federal administrators:

The fourth challenge . . . is the need to keep score. We need a clear set of measures that let us know how we are doing. This is an issue that involves the whole special education spectrum, not just that which relates to LRE issues. We need a cluster of student outcome measures that we can use to give regular feedback to ourselves and the field as a whole on how the investment in special education is working. (Bellamy 1987, p. 7)

My guide nudged me and said, sneeringly, "If mainstreamists have not had means for measuring the effectiveness of what they were doing, how could they claim "special education (circa post-1975, anyway) is working?" He snorted impolitely.

Oh, you forgot, I pointed out to him. Illusions do not require accountability. Again he snorted, this time in deep disdain.

Finally, his left hand and right hand performing obviously contradictory feats in broad daylight and in full view of all, with his head off in the clouds as he discussed what his office (Office of Special Education Programs, U.S. Department of Education) was planning to do in the future, Bellamy laid bare an essential truth about mainstream special education:

Mainstreamists, even as they seek to discredit traditional special education and banish it to the annals of history, freely and publicly admit they do not know how to achieve their own mainstream ideological goals!

The mainstreamist, clearly, is willing to throw away over 150 years of experience in special education in America in favor of concepts and practices that have not been exposed to rigorous educational research.

This startling revelation appeared when Bellamy, apparently unaware that many of us DO NOT accept his mainstream illusions as reality, stated in reference to current federal research funding priorities:

We are interested in seriously addressing the need to improve building-level capacity to serve students with disabilities well: What are the curriculum development needs? What are the instructional procedure needs? What are the needs for building effective and functioning social networks for children with disabilities? How do we make these realistic considerations, capable of being implemented in the schools?

A soon-to-be-announced research and technical assistance institute on regular school placement addresses the same set of issues: How do we ensure that, once a decision is made to provide education to a handicapped youngster in a local school, the back-up support is made available to do it well? (Bellamy, 1987, p. 8)

Compare this stark admission, that mainstream proponents for all their rhetoric and legalistic regulations actually know very little about how to accomplish successfully the education of handicapped children in public schools, with Bellamy's earlier smoke-and-mirrors illusion:

"... The (mainstream) special education system is not perfect by any means, but it is working, and far better than many of us would expect any federal public program to be working after only ten years."

Suddenly, I woke up, sweating, heart pounding. Gradually I became oriented and realized I had been dreaming. My dream/nightmare was over (wasn't it?). As I sat there with my dream so fresh and real in my mind, the thought came to me that now the stage in Indianapolis where Bellamy uttered his mainstreamist incantations in 1987 was dark. The meeting hall was empty. The National Leadership Conference 1987 on "Least Restrictive Environment: Commitment to Implementation" was long over. Wizard Bellamy and his fellow mainstreamist "verbal sorcerers," assistants, groupies, jesters and other conference participants had spread across America to disseminate their separate reality and its illusions to the accompaniment of "That Old Mainstream Magic." Their goal, and the mainstreamist intent, remains that of placing each and every handicapped child in public school, the letter and spirit of EHA for "individualized education programs" be damned. Joining them in their ranks were top federal and state department of education officials and their smoke-and-mirrors corps of lawyers.

This awareness made me start to shake again. With no conscious awareness on my part, a strange thought came to me as I sat there: Although no mention was made of it in my dream, full mainstreaming would result in the potential annual savings of hundreds of millions of dollars now spent on specialized education for handicapped children each year. Was it possible, could this cost factor and the hidden agenda of cost cutting in special education actually account for the reprehensible and unjustified attacks being made on special education today?

Conclusion

And so that was my dream.

Oh. One more thing. Several days after my dream, I was sitting quietly of an evening trying to recapture it (for, as you must know, dreams tend to evaporate as swiftly as the morning dew before the warm morning sun). Something had been nagging at me, something I couldn't quite grasp.

And then it came to me! I had almost forgotten, but now it came back with startling clarity. My guide has whispered something to me just before I awoke from my dream (He whispered in ASL of course! Don't ask me how. In dreams, everything is possible.)

Without thinking, I rushed to my typewriter and without even being aware of it started typing furiously.

Eventually I was finished, sweat-drenched, and just sat there, gazing in surprise at what I had typed.

Here it is, on the next page; what I typed, I mean. The words may surprise, perhaps even astound you. When I first read them they struck me as uncannily like what don Juan and don Genaro would tell young Carlos Castaneda to help him ward off evil sorcerers.

Well, anyway, here they are. All yours.

A Message from a Dream

Those of you who look beyond formulas and ideology, who care about the real humanity of handicapped children—both those who need public schools—are left with no federal or state governmental funding or regulatory support for your efforts. The word wizards have already taken over government regulations.

You have several more powerful things on your side, however.

First, you have high ideals for the education of handicapped children. These are actually contained within P.L. 94-142. These ideals can and should guide your efforts to help handicapped children, if you would but assure that they are presented not through smoke and mirrors but properly through federal and state regulations based on state-of-the-art special education principles.

Second, you have right on our side. This is present in the reality of the truth concerning the educational and associated needs of individual handicapped children. Once this truth has been shown to parents and legislators and public school teachers, these people will make sure the smoke-and-mirrors experts are removed from authority, that the word wizards and intellectual jesters are expelled from center stage once and for all.

Finally, and most importantly, you have your minds and your hearts to guide you. These are crucial as you face the Herculean task of not only preventing further destruction to handi-

capped children through harmful illusions from mainstreamists, but also helping those students who have already been harmed by mainstreamist ideology.

Your minds and your hearts, with right and the EHA to help you, are more than enough. You just have to use them. But, you must use them, and you must use them carefully and consistently as you work together in the difficult months and years ahead. The handicapped children of today and tomorrow look with trust to those of you who live in the world of reality, they depend on you not to let them down, asking that you not abandon them to the world of false and hurtful illusions. Your nation's handicapped children would plead with you, if they could, to assure them of a free, appropriate public education based upon an individualized education program—some in public schools, some in residential schools, some in other program options—just as the law says they are entitled. Your children would also plead with you to spare their parents from the confusing rhetoric that would have them believe the classical fallacy that "There is only one road to Rome" and its modern day counterpart, "There is only one road to a free, appropriate public education, and that is the regular school."

As you come together for the fight ahead, and you must, keep fresh in your minds these simple words of wisdom the kind Mexican sorcerer don Juan's heart offered to young Carlos Castaneda in the quiet and timeless desert of ancient northern Mexico:

"For me the world is weird because it is stupendous, awesome, mysterious, unfathomable; my interest has been to convince you that you must assume responsibility for being here in this marvelous world, in this marvelous desert, in this marvelous time. I wanted to convince you that you must learn to make every act count, since you are going to be here for only a short while; in fact, too short for witnessing all the marvels of it."

Carlos Castaneda (*Journey to Ixtlan: The Lessons of Don Juan* (1972)

Your nation's constitution mandates that handicapped children receive equality of opportunity as American citizens. P.L. 94-142 requires that you provide handicapped children with the kind of education that will empower them to truly become full participants in this marvelous world . . . in this marvelous time.

You must never forget that a quality education can only be constructed on the foundation of real knowledge of the unique needs of individual learners, handicapped or not, hearing or deaf, mobility impaired or not and never upon religion-like educational dogma handed out by extremists or fools of any persuasion concerning *where* education should take place. If you are not careful, you may someday witness efforts to close the likes of private boarding schools, private military schools, and colleges and universities such as Baylor University, Notre Dame University, Gallaudet University, Southern Methodist University, Yeshiva University, Vassar College and Howard University. After all, with a little work the word wizards could easily portray them as "segregated, separate, and isolated from the public education systems of the nation."

Now you know and I know that, simply and inelegantly stated, the idea of closing private schools and universities because they are not mainstream public institutions amounts to pure intellectual rubbish. What! You think the American public would never stand for it? Well, that idea is utter trash, but just remember that so is the now-popular mainstreamist rubbish that is being handed out today about classes, programs, and schools for handicapped children (i.e., they are isolated, segregationist, separate, institutionalized, etc.).

Yes, it's happening. And down the road a little, if this nonsense is allowed to continue, you will have the word wizards in government telling you what to think, what to believe, what you may read, what you may do, how you may live your life. You see, the basic problem with word wizards, although they are sometimes funny to watch, is they just don't know when to stop. Ever.

And so, you need to begin.

You need to begin once again to assume responsibility . . . to make your every act for handicapped children count . . . while you still have time to help this generation of handicapped children . . . and while you still have the opportunity to help keep America free.

Larry Stewart, Ed.D., educator, rehabilitation researcher, psychologist and writer, became deaf at the age of eight years. A former student in so-called mainstream public schools 25 years before the term came into use, Stewart is an outspoken advocate of the rights of handicapped individuals and their parents. He is currently a member of the executive committee of the National Association of the Deaf Task Force on P.L. 94-142. Dr. Stewart is superintendent of the Illinois School for the Deaf.

RIT/UR Establish International Hearing and Speech Center

A distinctive new International Center for Hearing and Speech Research has been established at Rochester Institute of Technology and the University of Rochester to benefit the hearing impaired population.

Established as a joint program of RIT and the University of Rochester's Medical Center, the center will be directed by Dr. Robert Frisina, who will relinquish his current position as an RIT vice president and secretary of the Institute.

In a joint statement RIT President M. Richard Rose and U. of R. President Dennis O'Brien said, "The appointment of Dr. Frisina represents the first significant step toward a major national and international program that will enhance the prevention, early detection, diagnosis and treatment of people with hearing and speech impairment through basic research, education and demonstration programs."

Rose added, "Bob Frisina was the architect and builder of the National Technical Institute for the Deaf, one of our nine colleges and an institute that is internationally renowned."

Frisina said, "This new enterprise represents a broad range of educational, scientific and service interests that will have a significant impact on people with hearing impairment. Through the critical mass of broadly represented expertise in Rochester, New York, we will create a basic research agenda and technology development effort not possible elsewhere."

Initial funding for the International Center for Hearing and Speech Research came from a \$2 million gift from a private Philadelphia foundation. Additional external funds will be sought to fully establish and operate the center. Offices will be located at RIT, with research and treatment facilities at the U. of R. Medical Center.

One goal of the center is to expand the frontier of basic knowledge with regard to the prevention, diagnosis and treatment of children and adults with hearing impairment and the design and manufacture of more useful hearing and speech aids.

Dr. Frisina cited the U. of R. Medical Center's Division of Otolaryngology as a significant component, under the leader-

ship of Dr. Arthur Hengerer, in achieving improved treatment of medically reversible hearing impairments.

In addition to developing effective educational programs for both practitioners and other service providers, the center will establish improved clinical and remediation procedures, develop innovative prototypes and disseminate its findings through pre-service and in-service training, consulting, presentations, publications and seminars.

"This bold initiative on his part to establish an International Center for Hearing and Speech Research is a fitting capstone to a brilliant career," Rose said of Frisina. "His contributions at RIT will have a lasting impact on the Institute."

Frisina first joined RIT in 1967 as vice president and organizing director of the NTID. Established by an Act of Congress and funded by the federal government, NTID is the only national technical college for the deaf. Frisina directed both the development of the program and the building of facilities on the RIT campus.

From 1977 to 1983 he served RIT as senior vice president for Institutional Advancement, leading RIT's development, alumni, recruitment, admissions and communications programs.

According to Rose, the Institute made significant strides during this period that helped establish RIT as one of the nation's leading comprehensive universities.

Since 1983, Frisina has been vice president and secretary of the Institute. In addition to serving as liaison with the board of trustees and administration, his responsibilities have included Institute media relations and publications, institutional research and policy studies and strategic planning. Frisina continued to lead the admissions, cooperative education, financial aid and veterans affairs programs through 1987.

A graduate of Westminster College, Fulton, Missouri, he earned an M.A. degree from Gallaudet University and a Ph.D. in audiology and psychology from Northwestern University. Prior to joining RIT he served as dean of Gallaudet University's graduate school.

Telecommunication and the Deaf

By J. PAUL JONES

Communication technology has both frustrated and benefitted the Deaf in our communication handicap. The first telephone was built by Alexander Graham Bell in an attempt to aid deaf people. The primary effect to date has been to further isolate them. One of the criteria that we have for determining if a hearing impaired person is deaf or hearing is whether or not he can use the telephone.

A deaf engineer, Robert Weitbrecht, found a way to improve the situation in California, in 1964. He was familiar with a type of automatic telegraph made by Teletype Corporation, which could send electronic signals through a cable to another teletype, printing messages on paper as they arrived. Weitbrecht made a device called an acoustic coupler which translated the electronic teletype messages into sounds and translated the sounds back into teletype messages again. Using rubber cups on the acoustic coupler, a person could connect a teletype machine (called a TTY) to a telephone handset and transmit a message through the phone lines to a similar device on the other end of the line.

For the first time, deaf people could use an ordinary telephone. The teletype had been around for a long time and was rapidly being replaced by more modern electronic devices. Therefore, companies were willing to give the discarded TTY's to organizations of the deaf. Many of the machines needed repairs, but the deaf found ways to repair them. The TTY's of the 70's were large, clanky, machines standing nearly four feet tall, painted battleship gray. They had non-standard keyboards, only vaguely similar to a regular typewriter. But, the deaf community was so excited about the prospect of being able to use a telephone that they bought the ugly old monsters. They were also proud that a deaf engineer had invented the device that made this possible.

In the early 80's, the personal computer began to make an impact on the American home. As the technology exploded, computers were being hooked together using devices called modems. A MODEM (MODulator / DEModulator) is very similar to the acoustic coupler that Robert Weitbrecht developed. It takes electronic signals, in the form of bits, from a computer and translates them into sounds, which are then sent through a phone line to another modem which translates the sounds back into bits that the computer can use.

Unfortunately, due to both hardware and software constraints, most modems cannot translate the sounds sent by a TTY, so, a deaf person using a TTY and another person using a computer and modem cannot communicate. There have been some attempts to solve this and some progress has been made, but, for the most part, the Deaf have once again been bypassed by technology. The successes have been "smart" modems and "smart" TTY's. The first puts the burden of advanced technology on computer users. If they want to talk to deaf people, they have to get an advanced form of modem that will handle Baudot (TTY) code. The second solution puts the burden of the extra expense on the Deaf. If we want to communicate with people using computers, we must buy TTY's that will handle ASCII (computer) code. Neither of these solutions is working on a large scale today. Computer programmers usually don't know any deaf people. Deaf people pay the lowest price they can for a TTY (also called TDD), and usually don't get the advanced ASCII features.

J. Paul Jones is a programmer/analyst for Information Systems and Services Department of the City of Fort Worth, Texas. Jones, 52, has been hearing impaired for 15 years. Among his involvements with the deaf community are Tarrant County Services for Hearing Impaired, Texas Deafnet, Inc., the Center for Computer Assistance for the Disabled, Deaf Elderly Adults Foundation, Inc., and Telecommunications for the Deaf, Inc. Kay, his wife of 32 years, is director of special education for the Fort Worth Independent School District. He is working toward a certificate as a registered interpreter for the deaf.

Another solution is an electronic bulletin board which can handle TTY or computer communication. There are a few of these, sometimes called deafnets, around the country. They serve the needs of some people, but are not very practical for business purposes. A more direct approach is a TTY message relay service. The simplest of these are human operated, usually by a person at a service center for the deaf. A hearing person might want to call a deaf person, but does not have a TTY. He calls the relay service and the operator uses a TTY to call the deaf person. Or, a deaf person calls the center using his TTY. The center then calls the hearing person or business and acts as a go-between, receiving the messages from the deaf on a TTY and speaking them to the hearing person. Then the center uses the TTY to give the hearing person's message to the deaf person. The process is slow, lacking in personal contact and not quite private.

Technology is advancing rapidly, and shows some promise. One service in use today is a computerized message relay system. It eliminates the person as a go-between, but can only send a message from a TTY to a hearing person, but not the other way around. The technology of voice or speech synthesis (producing speech from computer bits) is far ahead of the concept of speech recognition. Some day, a computer will probably be able to recognize and translate speech into type-written text or electronic communication, but it may be the next century before that happens. The changes in a person's voice, even from one day to the next, can baffle today's speech recognition systems. It may be a long time before you can speak into a microphone and a deaf person can see the words on a screen.

Telecommunication takes forms other than personal communication. Television is another telecommunication medium. The situation has been similar in providing the Deaf with usable television. Ordinary TV is almost unintelligible without sound. To remedy this, WGBH-TV in Boston began, in 1971, what is known as captioning. A line on the TV screen is provided for the purpose of printing the words spoken in a

show. Open captioning is where everyone receiving the station sees the words at the bottom of the TV screen. Weather alerts are sometimes open captioned. Closed captioned is where you have to have a decoding device to see the words. Programs which are closed captioned are marked on TV program listings and a special channel is used to advertise which programs will be captioned on a particular day. Unfortunately, not every program is captioned, in particular, presidential press conferences and special news broadcasts. It takes time and money and human resources to caption TV programs.

On the horizon are a few developments which could make a difference in telecommunications for the Deaf. One thing which is coming onto the market is picture telephones. Demonstrations of these have been seen from time to time since the early 40's, but the technology had some fatal bugs. What is needed is digital pictures. There are two approaches which show some promise. One is digital video cameras which work similar to digital audio recording. The concepts has been proven in laboratories, but the cost is astronomical, using today's technology. Lasers, fiber optics and high resolution digital TV receivers will make a difference in the future. Using a videophone, a deaf person would have the tremendous advantage of being able to use his native language.

Another advancement which may appear before too long is a digital picture which transmits only the sign language. Infrared LED's (lights) on a signing persons arm and hand can be sensed by two infrared cameras and transmitted to a computer. The computer can then send the picture to another computer which displays the pattern of lights on the screen. Experiments in California have proven that the signals are intelligible to deaf people as sign language.

We can only hope that in the future, other developments will break through the barriers and provide inexpensive and effective telecommunication for the hearing impaired.

Letter to the Editor

Dear Editor:

This letter is to let you know that I have noticed that THE DEAF AMERICAN and The NAD Broadcaster failed to mention the NAD Convention Award Winners. As a matter of fact, Deaf Mosaic in honor received Achievement in Television Production Award which Children of a Lesser God was named and is represented for the film.

We deserved the recognition of having this award in your respect. Would you please make this correction?

Mary Lou Novitsky
Producer, Deaf Mosaic

Division of Television, Film and Photography
Gallaudet University
Washington, D.C. 20002

Coordinator: Statewide Services For Deaf And Hearing Impaired Persons

Excellent career opportunity to administer program services and develop and implement policies in the Illinois Department of Mental Health and Developmental Disabilities. Requirements:

- professional experience in the administration of programs serving deaf and hearing impaired persons;
- a masters degree or equivalent experience in the field of mental health;
- experience in services for the mentally ill and developmentally disabled;
- fluency in American Sign Language and manually coded English

Job will be based in Chicago with statewide responsibilities. Hearing impaired persons are encouraged to apply. DMHDD is an equal opportunity employer. Send resume to: OMHDD

Office of the Director
State of Illinois Center, Suite 6-400
100 West Randolph
Chicago, Illinois 60601
Attn: Barbara L. Doyle

For additional information concerning this position, contact Ms. Doyle at (312) 917-2786 TDD/Voice.

Position Opening

August 1989. Instructor/Assistant Professor of English to teach undergraduate course work in these three areas: the developmental/ESL English Language Program, the Freshman/Sophomore Program, and the Major Level Program. ABD in English or related fields. Ph.D. preferred. Two years full time professional experience preferred in freshman composition, reading, and English, American, Minority, or World literature. Experience in teaching English to the deaf, developing instructional materials for teaching English to the deaf, TESOL, or individualized language programs at the college level preferred. Tenure track or annual renewal position depending on funding. Salary and rank depending on experience. Send letter of intent, vita and at least 3 letters of recommendation. Because of its mission of serving deaf students, Gallaudet University encourages applications from individuals who already possess sign language skills or who are deaf (hearing impaired). Qualified individuals without these skills must be willing to attend an 8-week paid orientation program in the summer for training and sign language and fingerspelling. Deadline for applications March 1, 1989.

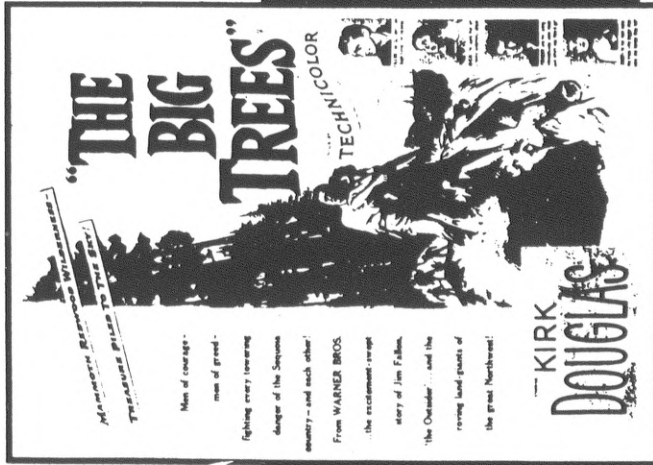
Nancy E. Kensicki, Chair
Gallaudet University
Washington, D.C. 20002
EEO/AA Employer

☆ BRAND NEW ☆ Only from the NAD! ☆ BRAND NEW ☆ Only from the NAD! ☆

Hollywood Movie Classics in Your Home

On Sale
here for
the very
first time!

From the land of
the giant redwoods
comes this action-
packed saga of
courage, greed,
and lust. Their
fighting for their
land and their
pride!



In
Technicolor
&
Opened
Captioned!



Lassie, the hero of young and old alike, stars in a great outdoor adventure set in the wilds of Oregon's majestic Cascade Mountain range. Lassie stars as "SHEP" the dedicated canine companion of stars Paul Kelly and Gary Gray. When Kelly's mining claim partners turn crooked, Lassie comes to the rescue and outsmarts his human co-stars.

Yes! I want to add your film classics to my home video VHS library:

Quantity

THE BIG TREES with Kirk Douglas

THE PAINTED HILLS with Lassie

Sub-total (\$29.95 each film)

Maryland Residents: add 5% sales tax

Add \$3.75 for each film for shipping & handling

TOTAL (enclosed with this order)

Ship the film(s) to:

Name: _____

Address: _____

City: _____

State: _____

Zip: _____

Please make the check payable to NAD & mail this order to NAD Bookstore, 814 Thayer Avenue, Silver Spring, Maryland 20910

